



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/535,321

05/18/2005

Kamaljit Singh Chana

05-351

5736

20306

7590

10/17/2006

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP  
300 S. WACKER DRIVE  
32ND FLOOR  
CHICAGO, IL 60606

EXAMINER

JAGAN, MIRELLYS

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/535,321	CHANA, KAMALJIT SINGH	
	Examiner	Art Unit	
	Mirellys Jagan	2859	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 13 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/18/05; 9/19/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 04105028 to Kanekawa et al [hereinafter Kanekawa].

Kanekawa discloses a device for use in measuring the temperature of a fluid comprising:

a structure bearing two temperature sensitive elements (3, 3') adapted to be temporarily exposed to the fluid;

wherein the structure provides respective regions (24', 24'') for the diffusion of heat from the fluid through the respective said elements, the thermal products (quartz, Si) of said regions being selected such that, in use, said elements experience different heat transfer rates when exposed to the same fluid temperature; the elements are thin film resistance thermometers; the structure has a member of a selected material (24'') the thickness of which differs in the respective regions; and the structure comprises a member (24'') having an internal cavity at a selected location (T), a first of the temperature sensitive elements (3) being borne on part of the surface of said member which overlies said cavity and the second (3') of the temperature sensitive elements being borne on part of the surface of said member (T') which does not overly

Art Unit: 2859

said cavity; the material is a glass, ceramic or quartz; the structure comprises a member composed of first and second materials having first and second thermal products at first and second locations respectively, a first of the temperature sensitive elements being borne on part of the surface of said member at said first location and the second of the temperature sensitive elements being borne on part of the surface of said member at said second location; and the first material is a glass or quartz and said second material is a ceramic (see figure 4 and abstract).

3. Claims 1-5, 8, 11, 12, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by GB2314164 to Jones et al [hereinafter Jones].

Referring to claims 1-5 and 8, Jones discloses a device for use in measuring the temperature of a fluid comprising:

a structure bearing two temperature sensitive elements (15, 16) adapted to be temporarily exposed to the fluid;

wherein the structure provides respective regions for the diffusion of heat from the fluid through the respective said elements, the thermal products (thickness) of said regions being selected such that, in use, said elements experience different heat transfer rates when exposed to the same fluid temperature; the elements are thin film resistance thermometers; the structure has a member of a selected material the thickness of which differs in the respective regions; and the structure comprises a member having an internal cavity at a selected location, a first of the temperature sensitive elements (15) being borne on part of the surface of said member which overlies said cavity and the second (16) of the temperature sensitive elements being borne on

Art Unit: 2859

part of the surface of said member which does not overly said cavity; the material is quartz; and the cavity is filled with a gas (air) (see figure 5, and pages 2, 3, and 6).

Referring to claims 11 and 12, Jones discloses a method of measuring the temperature of a fluid comprising:

temporarily exposing the fluid to a device comprising a structure bearing two temperature sensitive elements and providing respective regions for the diffusion of heat from the fluid through the respective said elements, the thermal products of said regions being selected such that said elements experience different heat transfer rates when exposed to the same fluid temperature;

monitoring the respective temperatures of the temperature sensitive elements of such device over a period;

deriving from respective changes of temperature of said elements the respective heat transfer rates experienced thereby; and

deriving the temperature of the fluid from a relationship of the temperatures of said elements and the derived heat transfer rates;

wherein the temperature of the fluid is derived using the relationship claimed in claim 12; and the temperature sensitive elements are borne on a curved surface of the structure.

Referring to claims 14 and 15, Jones discloses an apparatus for measuring the temperature of a fluid comprising:

a device according to claim 1;

means for monitoring the respective temperatures of the temperature sensitive elements of such device over a period; and

computational means for deriving from respective changes of temperature of said elements the respective heat transfer rates experienced thereby and for deriving the temperature of the fluid from a relationship of the temperatures of said elements and the derived heat transfer rates;

wherein said computational means are adapted to derive the temperature of the fluid using the relationship of claim 15; and the temperature sensitive elements are borne on a curved surface of the structure.

*Allowable Subject Matter*

4. Claims 6, 13, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 7 is allowable for being dependent on allowable base claim 6.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest the following in combination with the remaining limitations of the claims:

A device for use in measuring the temperature of a fluid, wherein the structure comprises a tubular member of a first material surrounding a member of a second material over part of its length and surrounding a cavity over another part of its length (see claim 6).

Art Unit: 2859

A method of measuring the temperature of a fluid, wherein the respective heat transfer rates are derived using the claimed relationship (see claim 13).

An apparatus for measuring the temperature of a fluid, wherein the computational means are adapted to derive the respective heat transfer rates using the claimed relationship (see claim 16).

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references disclose thermometers having dual temperature sensors:

U.S. Patent 4,595,298 to Frederick

U.S. Patent 6,432,287 to McMackin et al

U.S. Patent 4,654,624 to Hagan et al


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2859

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJ  
October 6, 2006



**Mirellys Jagan**  
**Patent Examiner**  
**Technology Center 2800**